

least a month before petaliferous flowers appear. This past season it was not until July 15 that the first flowers were seen here, and for a week or more after that they occurred only sparingly.

Plants in cool, moist woods may retain their opposite leaves until late July, and very many of them apparently die without ever showing a petaliferous flower. During the remainder of the season, both kinds of flowers are freely produced.

Impatiens in this respect offers a noteworthy contrast with Viola, whose petaliferous flowers always precede and sometimes follow the cleistogenes of summer. From this behavior of Impatiens it seems hardly probable that temperature can be the only factor determining the production of one or the other form of flower, as has been suggested in the case of the violets.

## THE NOMENCLATURE OF THE NEW ENGLAND AGRIMONIES.

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FOUR years ago Mr. E. P. Bicknell<sup>1</sup> published an account of the American species of *Agrimonia*, lucidly distinguishing no less than seven of them, instead of the two commonly recognized in the then current manuals. While Mr. Bicknell's work bears ample evidence of care and accuracy in the botanical observations which he recorded, it fails signally to carry conviction in the matter of synonymy and nomenclature. The following notes, it is hoped, may contribute to a final settlement of our five New England species of this genus.

I A. HIRSUTA, Bicknell, Bull. Torr. Club, xxiii. 509 (1896). There can be no doubt from Wallroth's careful and detailed characterization that this is his *A. gryposepala*, published in 1842. To displace this well-described specific combination of Wallroth, Mr. Bicknell takes up the varietal name "hirsuta," published by Muhlenberg in his catalogue. Unfortunately, however, Muhlenberg's plant was not properly described, and *A. Eupatoria hirsuta*, Muhl., is at best a *nomen subnudum*. Now, whatever difference of opinion may exist on the question whether a specific name may be displaced by an earlier varietal name, there can, I think, be only one opinion as to the inadvisability of discarding a name of known and definite application and

<sup>1</sup> Bull. Torr. Club, xxiii. 508-523, t. 282-283.

replacing it by one so vague and obscure, that its original application is a matter of mere conjecture.

Let us see upon just what grounds Mr. Bicknell can maintain the identity of *Agrimonia Eupatoria hirsuta*, Muhl., with the species to which he has applied the name *A. hirsuta* (Muhl.) Bicknell. The type of Muhlenberg's plant is, I learn, either not in existence or at least in a state of confusion with other material, which makes its certain identification impossible. Consequently our sole knowledge of *A. Eupatoria hirsuta*, Muhl., is to be derived from the original description. Muhlenberg's treatment of *Agrimonia* is as follows :

<i>Calix.</i>	<i>Corolla.</i>	DIGYNIA	<i>Habitat, etc.</i>
5 fid.	5 pet.	360 AGRIMONIA. AGRIMONY.	Semina 1-2 in calice.
	lut.	1. eupatoria hirsuta 7/8 rough-haired.	Pens. fl. Aug. Car.
	lut.	B. glabra 7/8 smooth	Pens. fl. Aug.
	lut.	2. parviflora 7/8 dotted	Pens. fl. Aug.
	lut.	3. pumila 7/8 little	Miss.

A glance at this treatment will show that the description of *A. Eupatoria hirsuta* contains but one distinctive word, "rough-haired."<sup>1</sup> It must have required extraordinary powers of intuition to discover from this one word just which of seven more or less hairy plants Muhlenberg meant by his *Agrimonia Eupatoria hirsuta*, especially as the plant in question, according to Mr. Bicknell's interpretation, turns out to be villous rather than hirsute and is one of the least hairy species of the whole group,—much less so, in fact, than the typical *A. Eupatoria* of Europe. Unfortunately many of us are not endowed with this well-nigh necromantic power, and must accordingly stop in our retrogressive search after priority at the earliest sufficient and intelligible description. To persons of these more modest attainments *A. Eupatoria hirsuta* must be a negligible *nomen subnudum* and *A. gryposepala*, Wallr., be preferred to *A. hirsuta* (Muhl.) Bicknell.

It is true the combination *A. Eupatoria β hirsuta* was also employed by Dr. Torrey and, as Mr. Bicknell informs us, "independently for a more hairy form of the same plant." I have not succeeded in finding the type of this variety in the Torrey herbarium. Concerning the variety we learn from Dr. Torrey's description merely that it was a smaller and much more hairy plant than what Torrey regarded the typical form of *A. Eupatoria*, the latter being probably the very plant

<sup>1</sup> The range including Carolina cannot be regarded as distinctive, since several species are either known to occur in Carolina or from their general distribution are to be expected there.

(*A. gryposepala*) to which Mr. Bicknell has applied the name *hirsuta*. Torrey's *A. Eupatoria*  $\beta$  *hirsuta* has therefore scarcely more definiteness than *A. Eupatoria hirsuta*, Muhl.

2. *A. BRITTONIANA*, Bicknell, l.c. 510. Suspecting from an examination of authentic material of Mr. Bicknell's new species that it was identical with the plant of Central Europe which has for many years figured as *A. pilosa*, Ledeb., I forwarded some specimens of the American plant to Berlin, where it was subjected at the Royal Botanical Museum to a critical comparison by Mr. J. M. Greenman, who pronounces it in all respects identical with the material there representing Ledebour's species. I have not had an opportunity to have the plant compared with Ledebour's type, but have no reason to doubt the accuracy of the German specimens, especially as Russian specimens of *A. pilosa*, determined by no less an authority than Maximowicz, are clearly the same. Mr. Bicknell says of his species. "*A. Brittoniana* is in fact very distinctive from any American species while nearly related to certain Asiatic forms — *A. viscidula* Bge., *A. pilosa* Ledeb., and *A. Dahurica* Willd., plants which have been variously confused together by authors, and all of which have finally been referred to *A. Eupatoria* L." This is certainly a high-handed way of disposing of a species like *A. pilosa*, which is not only well represented in the larger herbaria, but recognized in such standard works as Nyman's *Conspectus*, several editions of Garcke's *Deutschlands Flora*, Thomé's *Flora von Deutschland*, etc. It is also rather inconsistent with other parts of Mr. Bicknell's work. Surely various names for the American Agrimonies have been much confused, and most of them were referred to *A. Eupatoria*, yet Mr. Bicknell has not hesitated to take them up even when their status, as in *A. Eupatoria hirsuta*, is most vague.

However, there is still an earlier name for Mr. Bicknell's *A. Brittoniana*, as this is just what Michaux described as *A. striata*, a fact suggested to me by Michaux' rather characteristic description, and recently confirmed by a personal examination of the well-preserved type of *A. striata* at the Jardin des Plantes in Paris. The Michaux specimen is in every way a close match for Mr. Fernald's plant from St. Francis, Maine, the latter being Mr. Bicknell's first-mentioned type of *A. Brittoniana*. As a corollary of these observations, attention may be called to the identity of *A. pilosa*, Ledeb., as now interpreted in Germany and Russia, with *A. striata*, Michx., which, as the earlier

name, should be accepted for this species in Europe as well as in America.

3. *A. MOLLIS*, Britton, Bull. Torr. Club. xix. 221 (1892); *A. Eupatoria*  $\gamma$  *mollis*, Torr. & Gray, Fl. i. 431 (1840). The earliest specific combination for this plant is *A. platycarpa*, Wallr., Beitr. i. 38 (1842), a name which will be preferred by conservative botanists to the recent combination derived by Professor Britton, from the earlier varietal name *mollis*.

4. *A. STRIATA*, Bicknell, l. c. 509, not Michx. A significant fact regarding Mr. Bicknell's interpretation of the Michauxian *A. striata* is that its range — "Southeastern New York, and doubtless Connecticut, to Virginia, west to Missouri" — did not include Michaux' type station which was in Canada (presumably Quebec). Had Mr. Bicknell noticed this fact he could scarcely have failed to surmise the identity between Michaux' plant and Mr. Fernald's St. Francis plant from the same general region. The earliest satisfactory name for *A. striata*, Bicknell not Michx., is *A. microcarpa*, Wallr.

5. *A. PARVIFLORA*, Solander. This is the only one of the five species which Mr. Bicknell credits to New England, which appears to me to bear a correct name in his revision.

In conclusion, our New England forms may be synopsized thus:

Roots fibrous, unthickened,

Principal leaflets numerous, 9 to 15. . . . . *A. PARVIFLORA*, Solander.

Principal leaflets fewer, 3 to 7 (rarely 9).

Bristles of the fruit early spreading.

*A. GRYPOSEPALA*, Wallr. (*A. hirsuta*, Bicknell).

Bristles of the fruit erect, connivent.

*A. STRIATA*, Michx. (*A. Brittoniana*, Bicknell).

Roots fusiform, distinctly thickened,

Leaflets smoothish . . . . . *A. MICROCARPA*, Wallr. (*A. striata*, Bicknell).

Leaflets tomentose beneath. *A. PLATYCARPA*, Wallr. (*A. mollis*, Britton).

*A. gryposepala*, Wallr., and *A. striata*, Michx., are rather widely distributed in New England, but *A. parviflora*, *A. microcarpa*, and *A. platycarpa* appear to reach their northeastern limit in Connecticut, and have not, to the knowledge of the writer, been reported from any other New England state.

GRAY HERBARIUM.